



Environmental & Civil Engineering Services

Engineering ♦ Geotechnical ♦ Testing

Inter-Basin Transfer Permit Application

To: Mr. Jim McAdoo
TDEC-Water Pollution Control Division
6th Floor, L & C Annex
401 Church Street
Nashville, Tennessee 37243-1534

Project: City of Crossville Water System
Inter-Basin Transfer Permit Application

Subject: Permit Request for Inter-Basin Transfer Activity:
Upper Tennessee – Clinch/Emory River Basin into Upper Cumberland River Basin

Date: December 15, 2009

The City of Crossville is requesting an inter-basin transfer permit from the Tennessee Department of Environment and Conservation for up to a total of 5.0 MGD from the Upper Tennessee – Clinch/Emory River Basin to the Upper Cumberland River Basin.

The permit fee for inter-basin transfer permit applications is \$250 per 125,000 gpd or fraction thereof up to 500,000 gpd and \$1000 per 500,000 gpd or fraction thereof for flows above 500,000 gpd. Therefore, the permit fee for this proposed transfer is \$10,000 and is attached to this application.

The City of Crossville water system operates two water treatment facilities; one on Meadow Park Lake and one on Lake Holiday. Due to its geographic location at the top of the Tennessee Divide, the City cannot avoid performing inter-basin transfers. The Crossville water system withdraws water in two basins. The Meadow Park Lake is located in the Upper Cumberland Basin and Lake Holiday is located in the Upper Tennessee -Clinch/Emory River Basin. The City's distribution system has customers within each basin as well as a wholesale customer, Grandview Utility District, which has customers within the Lower Tennessee-Hiwassee River Basin.

The City of Crossville has been funded through the State Revolving Fund with State Revolving Funds and the American Recovery and Reinvestment Act (ARRA) to construct a water harvesting system from Lake Tansi. The water harvesting system is planned with an intake in Lake Tansi, a pump system, and a 36 inch pipeline from Lake Tansi to the City's Meadow Park Lake and Meadow Park Water Treatment Plant. The system will be capable of pumping up to 5000 gpm. The proposed project will require this inter-basin transfer permit in order to transfer the water for treatment as the Meadow Park Water Treatment Plant is within the Upper Cumberland River Basin while Lake Tansi is within the Upper Tennessee – Clinch/Emory River Basin.

The historical growth of the distribution system has been such that the majority of the customers of the system are located within the Upper Tennessee -Clinch/Emory River Basin. The City's construction of the Meadow Park water treatment plant in 1938 created the first documentable inter-basin transfer. The majority of the water transferred under this permit will be transferred back into the Upper Tennessee – Clinch/Emory River Basin to customers within this basin.



SECTION 1. REQUIRED INFORMATION

1.1. Volume of the proposed withdrawal and the proposed transfer stated in gallons per day that the applicant seeks to be authorized.

The City of Crossville is seeking authorization for the transfer of up to 5.0 MGD. The proposed transfer includes some transfer volume that has been ongoing historically from the Upper Tennessee – Clinch/Emory River Basin into the Upper Cumberland River Basin. This historical transfer was not issued a grandfathered limit for whatever reason.

Speculation as to the reason would include a misunderstanding of the intent of the law and compliance with the law. The historical transfer occurred through the City of Crossville withdrawing water from Lake Holiday which is in the same basin as Lake Tansi and delivering it to the West Cumberland Utility District and the Catoosa Utility District. Both of these districts have customers within the Upper Cumberland River Basin. The West Cumberland Utility District is almost entirely contained within the Upper Cumberland River Basin.

Please note that all volumes described within this application are based on the average daily transfer amount calculated for the highest continuous 90-day period reported in units of gallons per day as required by the regulations and the Tennessee Inter-Basin Water Transfer Act. Actual measured flows on any given day may exceed or fail to reach the flow volumes contained within the permit application.

1.2. Identification of all of the withdrawal, return, and transfer points.

The City of Crossville is located on the Cumberland Plateau of eastern Tennessee. The water system serves areas of the Cumberland Plateau in three distinct regulatory basins defined in the Inter-Basin Transfer Permit Act of the State of Tennessee. The three basins are the Upper Tennessee – Clinch/Emory River Basin, the Lower Tennessee – Hiwassee River Basin, and the Upper Cumberland River Basin. It is not uncommon for the pipes in the City of Crossville water distribution system to cross a basin boundary several times along a basin border. Many of the main roads within the geographical area are located on the divide or in close proximity to the divide between basins. Consequently, it is impractical to permit a transfer each time the pipe crosses the basin limits.

In addition, the City of Crossville has surface water sources in two of these three basins. The City of Crossville's Lake Holiday Water Treatment Plant withdraws water from Lake Holiday; an impoundment constructed in the early 1960s on the Obed River. The Obed River is within the Upper Tennessee – Clinch/Emory River Basin. The City of Crossville's Meadow Park Water Treatment Plant withdraws water from Meadow Park Lake; an impoundment constructed in 1938 on Meadow Creek. Meadow Creek is within the Upper Cumberland River Basin.

The City of Crossville has proposed a third surface water source; obtained funding for the construction, and is beginning implementation to construct a system to utilize the third water source. The third water source is Lake Tansi; a 405 acre man-made impoundment within the Upper Tennessee – Clinch/Emory River Basin. The water from this impoundment is proposed to be transferred under separate permit from the basin of origin into the Upper Cumberland River Basin for treatment at the Meadow Park Water Treatment Plant. The majority of this transfer



will be returned to the Upper Tennessee – Clinch/Emory River Basin for distribution to customers.

This proposed permit is requested to cover transfer of surface water from the Lake Tansi in the Upper Tennessee – Clinch/Emory River Basin to the Upper Cumberland River Basin. The transfer will be to the Meadow Park Lake and/or the Meadow Park Water Treatment Plant for treatment. The water once treated will be pumped in the City of Crossville water distribution system. The majority of the water will then be transferred back into the Upper Tennessee – Clinch/Emory River Basin for use by customers in this basin; the basin of origin.

Attached to this application is a water distribution system map which shows the general location of the piping systems within the City of Crossville water system. The map identifies the location of the City of Crossville's two withdrawal points, one proposed withdrawal point, and the point at which transfer into the Upper Cumberland River Basin occurs. The transfer point is on the Tennessee divide where the proposed pipeline crosses Lantana Road, Tennessee State Route 101 south of Crossville.

1.3. The volume of water that will be returned to the basin of origin or downstream basin.

The projections of withdrawal volumes and estimates of transfer between basins were performed with water harvesting from Lake Tansi and without water harvesting from Lake Tansi. These projections were used to demonstrate the effects on inter-basin transfer volumes for the City of Crossville Water System with and without the proposed project in demonstration of the environmental benefit derived from including Lake Tansi as a water source to help reduce the net transfer into the Upper Tennessee Clinch/Emory River Basin.

The projections show that a small fraction of the proposed transfer will be transferred to a downstream basin, the Lower Tennessee – Hiwassee River Basin via a separate permit to customers in the Grandview Utility District. The proposed permit volume of this transfer is 25,000 gpd. It is estimated that up to 9000 gallons per day of the transfer will be returned to this downstream basin.

The projections demonstrate that approximately 91.7% of the transfer volume will be returned to the basin of origin. Therefore, 4.58 MGD of the proposed permit limit of 5.0 MGD will be returned to the basin of origin; 0.18% will be returned to a downstream basin; and the remaining 8.1% will be used in the Upper Cumberland River Basin.

1.4. The peak capacity of each major component in the proposed withdrawal and transfer facilities.

The peak capacity of the Meadow Park Water Treatment Plant controls the peak capacity of the existing withdrawal at Meadow Park Lake. The current peak operational capacity of the Meadow Park Water Treatment Plant is 3.5 MGD.

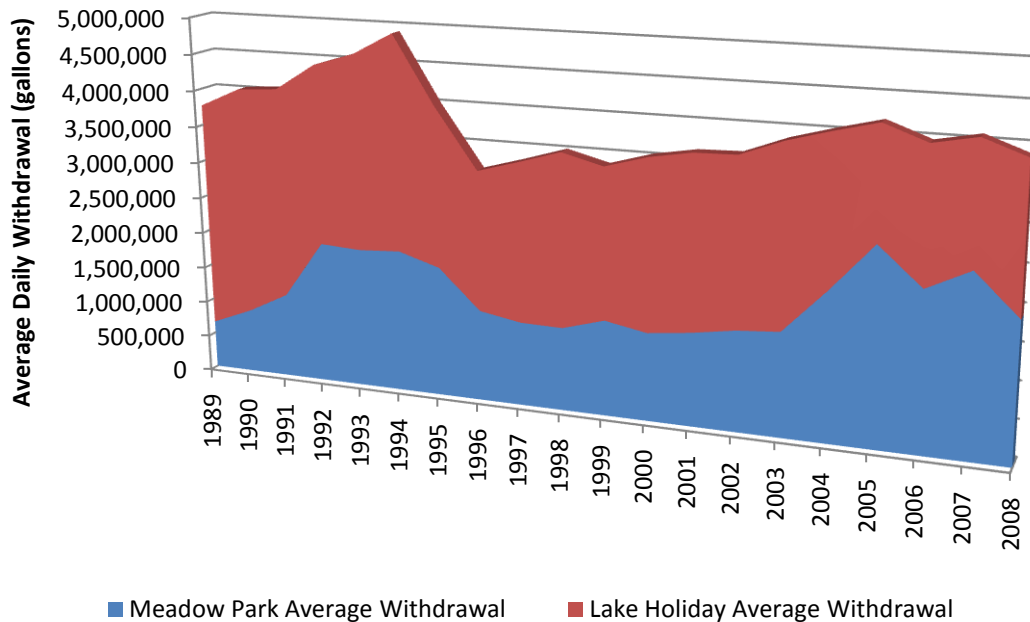
The peak capacity of the Lake Holiday Water Treatment Plant controls the peak capacity of the existing withdrawal at Lake Holiday. The current peak operational capacity of the Lake Holiday Water Treatment Plant is 4.0 MGD.



The historical withdrawal from each of the two water sources used by the City of Crossville is summarized for the last twenty year period in the table and graph below.

Year	Meadow Park Average Withdrawal (gallons)	Meadow Park Percentage of Total Withdrawal	Lake Holiday Average Withdrawal (gallons)	Lake Holiday Percentage of Total Withdrawal	Total Average Withdrawal (gallons)
1989	661,490	17.5%	3,108,318	82.5%	3,769,808
1990	885,240	22.0%	3,144,203	78.0%	4,029,442
1991	1,171,511	28.8%	2,895,274	71.2%	4,066,785
1992	1,960,361	44.3%	2,469,486	55.7%	4,429,847
1993	1,929,718	41.9%	2,675,586	58.1%	4,605,304
1994	1,965,819	40.0%	2,946,321	60.0%	4,912,140
1995	1,794,099	45.1%	2,181,151	54.9%	3,975,249
1996	1,252,385	39.5%	1,915,167	60.5%	3,167,551
1997	1,152,797	34.6%	2,177,819	65.4%	3,330,616
1998	1,143,214	32.6%	2,362,340	67.4%	3,505,553
1999	1,309,345	38.9%	2,052,373	61.1%	3,361,718
2000	1,204,361	34.1%	2,323,609	65.9%	3,527,970
2001	1,273,553	35.1%	2,354,088	64.9%	3,627,641
2002	1,368,953	37.6%	2,275,830	62.4%	3,644,783
2003	1,416,608	36.7%	2,447,877	63.3%	3,864,485
2004	2,015,336	50.1%	2,010,858	49.9%	4,026,194
2005	2,666,332	63.9%	1,505,112	36.1%	4,171,444
2006	2,157,282	54.4%	1,804,759	45.6%	3,962,041
2007	2,447,433	60.0%	1,629,553	40.0%	4,076,986
2008	1,895,213	49.0%	1,975,858	51.0%	3,871,071

City of Crossville Water System Average Daily Withdrawals by Year and Source



The proposed transfer is performed through a proposed 36" pipeline between Lake Tansi and Meadow Park. The system to perform the transfer includes wedge wire type screens in Lake Tansi which allow water to enter a pump station wetwell. The wetwell will have two 5000 gpm pumps installed in it driven by 250 hp electric motors that are controlled by variable frequency drives. The pumps will be capable of operation from 2500 gpm to 5000 gpm and will transfer the water through the proposed 36" pipeline.

1.5. Engineering and economic justification for the capacity of each major component of the proposed withdrawal and transfer facilities.

The proposed transfer system from Lake Tansi to Meadow Park Water Treatment Plant and Meadow Park Lake is comprised of wedge-wire type stainless steel screens located in Lake Tansi connected to 30" diameter steel pipes supplying a concrete wetwell. Two 5000 gpm rated capacity vertical turbine pumps are to be located in the wetwell and will be driven by 250 horsepower electric motors controlled by variable frequency drives. The pumps will transfer the water via a 36" diameter HDPE pipeline to the outfall location at Meadow Park Lake and the inlet piping to the Meadow Park Water Treatment Plant. The pumps will be capable of operating between 2500 gpm and 5000 gpm when controlled by the variable frequency drives.

Piping alternatives for the pipeline have been evaluated with respect to electrical power requirements. Costs and energy input were compared for various pipeline sizes and it was

determined that the optimum size of pipeline is 36 inches, resulting in the most cost effective and best energy conservation.

1.6. An assessment of the hydraulic and environmental impacts of the withdrawal on the losing river.

The losing river basin for the permit is the Upper Tennessee – Clinch/Emory River Basin. However, some of the transfer from this basin to the Lower Tennessee – Hiwassee River Basin would actually have been sourced out of the Upper Cumberland River Basin. Based on all of the City of Crossville’s withdrawals for drinking water and discharges into the different basins, the ultimate losing basin is the Upper Cumberland River Basin. The Upper Tennessee – Clinch/Emory River Basin has a net gain of water from the operation of the City of Crossville Water System.

The transfers and net loss out of the Upper Cumberland River Basin has been occurring since 1938 when the Meadow Park Water Treatment Plant was constructed for the City of Crossville Water System. The fact that this has been occurring since before the existence of any significant environmental laws results in a lack of adequate accurate historical records to document any hydraulic and environmental impacts.

The hydraulic impacts associated with the construction of the Meadow Park Dam and subsequent use of the water by the City of Crossville, along with any inferred environmental impacts, can be estimated on the basis of minimum stream flows. However, any environmental impacts from the loss of this stream flow occurred long ago. The loss of the volume of this Inter-Basin Transfer Permit Application alone, logically, does not represent a significant hydraulic flow reduction or environmental impact on Meadow Creek or the Cumberland River.

The National Park Service has expressed a concern on the increase of flow in the Obed River below Crossville. The net transfer into this basin from the Upper Cumberland River Basin has in the past contributed to this increase of flow.

The City of Crossville proposes to withdraw water at a rate from 2,500-5,000 gallons per minute, and requests a transfer of 5.0 gpm from Lake Tansi during the period of October 15 through April 15 each year. Pumping water from the reservoir would be significantly limited during the dry season to periods in which work was being performed on another reservoir, occasions which kept another reservoir from being able to produce potable water, and severe droughts. Therefore, the proposed project would not have any significant impact on the low flow values for the Lake Tansi watershed that occur during the dry season. Any impact to the lower reaches of Daddy’s Creek would be limited to less than 1.0% as the impact from the construction of the Lake Tansi reservoir itself would have been limited to 3.2% based on the methodology presented.

The proposed pipeline has an elevation high point at Lantana Road that is approximately 118 feet above the Lake Tansi Reservoir. The Meadow Park Lake is actually lower than the Lake Tansi Reservoir, hydraulically. However, pumping is required to cross the Tennessee Divide as the lakes are on the two sides of the divide.

Detailed hydraulic calculations are presented in Appendix III of the City of Crossville Drinking Water Facilities Plan as attached.



The nearest downstream stream gauge for each of the City of Crossville's two existing withdrawal locations, Meadow Park Lake and Lake Holiday, and for the proposed withdrawal location, Lake Tansi have been checked for the availability of historical data using the StreamStats v2 system of the U.S. Geological Survey.

The nearest downstream stream gauge for Meadow Park Lake is the gauge at 35.8911776 north latitude and -85.2180214 west longitude referred to as USGS Station Number 03418500 named **Caney Fork at Clifty**. The gauge has data for the period of 1931 to 1949. Please note that this gauge data includes some data from before the construction of Meadow Park Dam in 1938 although much of the data was taken during significant drought periods on the Cumberland Plateau. Only the years of 1937, 1942, 1945, 1948, and 1949 had precipitation above normal during the period from 1931 to 1949 on the Cumberland Plateau. Therefore, there is only 5 years in which there was above normal rainfall in the gauge data and 14 years of below normal rainfall. During the period of 1931 to 1949, the Cumberland Plateau Area had a rainfall deficit in excess of 73 inches below normal. The data from the stream gage is summarized in the table below.

The nearest downstream stream gauge for Lake Holiday is the gauge at 36.0814937 north latitude and -84.6703113 west longitude referred to as USGS Station Number 03539800 named **Obed River Near Lancing, TN**. The gauge has data for the periods of 1956-68, 1973-1987, and 1999-2004. Please note that this gauge data includes a small amount of data from before the construction of Lake Holiday Dam. The data is summarized in the table below.

The nearest downstream stream gauge for Lake Tansi is the gauge at 35.89042468 north latitude and -84.9378241 west longitude referred to as USGS Station Number 03539000 named **Daddys Ck near Grassy Cove Tenn**. The gauge has data for the period of 1925 to 1930. Please note that this gauge data includes data from before the construction of Lake Tansi although much of the data was taken during significant drought periods on the Cumberland Plateau. The data is summarized in the table below.

Parameter	USGS Station Number 03418500	USGS Station Number 03539800	USGS Station Number 03539000
Station Name	Caney Fork at Clifty, TN	Obed River Near Lancing, TN	Daddys Ck Nr Grassy Cover, TN
Period of Record	1931-49	1956-68, 1973-87, 1999-2004	1925-30
Contributing Drainage Area	111.00 square miles	518.00 square miles	Unpublished
Average daily streamflow	213.17 cfs	1006.94 cfs	138.03 cfs
1 Percentile Flow	2220.4 cfs	9627.0 cfs	1385.2 cfs
5 Percentile Flow	847.0 cfs	3792.5 cfs	495.7 cfs
10 Percentile Flow	507.7 cfs	2340.0 cfs	303.6 cfs
20 Percentile Flow	292.0 cfs	1350.0 cfs	179.0 cfs
25 Percentile Flow	233.0 cfs	1100.0 cfs	151.0 cfs
30 Percentile Flow	192.0 cfs	900.0 cfs	121.0 cfs
40 Percentile Flow	122.0 cfs	598.0 cfs	86.0 cfs
50 Percentile Flow	64.0 cfs	382.0 cfs	62.0 cfs



Parameter	USGS Station Number 03418500	USGS Station Number 03539800	USGS Station Number 03539000
60 Percentile Flow	28.0 cfs	211.0 cfs	40.0 cfs
70 Percentile Flow	11.0 cfs	98.0 cfs	20.3 cfs
75 Percentile Flow	7.6 cfs	67.0 cfs	13.0 cfs
80 Percentile Flow	4.6 cfs	45.0 cfs	7.47 cfs
90 Percentile Flow	1.13 cfs	18.0 cfs	1.8 cfs
95 Percentile Flow	0.4 cfs	8.4 cfs	0.2 cfs
99 Percentile Flow	0.1 cfs	1.9 cfs	0.0 cfs

Withdrawal from Meadow Park Lake can be up to 3.5 MGD (5.42 cfs) based on the design capacity of the Meadow Park Water Treatment Plant. Assuming that the flow data from the gage at Clifty, TN on the Caney Fork is representative of average flows conditions, the design withdrawal from Meadow Park Lake would reduce the average daily streamflow in the Caney Fork River at Clifty from 213.2 cfs to 207.8 cfs; constituting a 2.54% reduction in the average flow.

Withdrawal from Lake Holiday can be up to 4.0 MGD (6.19 cfs) based on the design capacity of the Lake Holiday Water Treatment Plant. Assuming that the flow data from the gage on the Obed River near Lancing, Tn is representative of average flow conditions, the design withdrawal from Lake Holiday would reduce the average daily streamflow in the Obed River near Lancing from 1006.9 cfs to 1000.7 cfs; constituting a 0.61% reduction in the average flow.

The National Park Service has performed an environmental analysis of the impact of withdrawals from Lake Tansi on the river basin. A detailed analysis as part of the Section 7 Review and Determination under the Wild and Scenic Rivers Act has been performed by the National Park Service on the effects that the proposed withdrawal from Lake Tansi would have on the Obed Wild and Scenic River and a main tributary, Daddy's Creek. The analysis was performed for the Lake Tansi Water Harvesting Project. The findings from the National Park Service state, "In short, we have determined that, as proposed, the project is not likely to unreasonably diminish the value for which the Obed Wild and Scenic River is designated to protect." The detailed report finds, "The hydrological analysis concludes that the watershed contributing flow to Lake Tansi produces an estimated 2.1 to 3.3 percent of the Daddys Creek flow at the OWSR boundary. A reduction in flow by this amount, as the report states, would be difficult to measure at a standard USGS streamgage or using standard USGS/NPS discharge measurement techniques." The analysis further concludes, "the proposed water harvesting project has minimal potential to affect assimilative capacities for analytical parameters representing general water quality conditions." The proposed water harvesting project is expected to reduce the mean annual flow in Daddys Creek at the OBRI boundary by 2.97 percent.

1.7. An engineering, environmental, and economic assessment of the feasibility of utilizing alternative water sources by the water system in the receiving basin.

The City of Crossville must augment the currently available supply in order to maintain adequate water volumes for its customers in the region. The projected 20-year raw water demand as



stated in the City of Crossville Facilities Plan is 7.54 million gallons per day. The City has experienced rationing during recent droughts and needs to provide protection against future drought conditions.

Four alternatives were considered to provide additional raw water supply and storage to the City of Crossville:

No action alternative: If no action is taken, the City risks the potential of inadequate water supply to serve its residential and commercial customers. Taking no action could result in measures such as water rationing; ultimately affecting the economic viability of the City as well as the quality of life for City residents. The action is deemed unfeasible.

Water harvest from the Watts Bar Reservoir to Meadow Park Lake: The estimated capital cost of this alternative is \$61.5 million. Costs are based upon an intake structure at the Watts Bar Reservoir with a pumping station and two 5000 gpm pumps and approximately 32 miles of 36 inch pipeline to the Meadow Park Lake and Treatment Plant. The system would also require 2 additional booster stations along the pipeline to prevent excessively high pressures in the pipeline. At each booster station, a ground storage tank would be necessary to minimize surges in the system and provide acceptable pump operation characteristics. This alternative would also increase the sediment load to the Meadow Park Lake, which would be used to store a portion of the water pumped. Additional environmental impacts could result due to the TVA coal ash spill at Kingston and the effects to streams along the pipeline route.

The water quality for treatment purposes from the Watts Bar Reservoir would be significantly lower than the existing water sources used by the City of Crossville and could require plant modifications in order to treat to required standards.

This alternative has the highest capital cost, most significant environmental impacts, and greatest power requirement of the alternatives considered. Details of the alternative can be found in the attached Facilities Plan. Therefore, it was not the selected alternative.

Water harvesting from Caney Fork River: Water harvesting would be located in the western part of Cumberland County near Clifty. The estimated capital cost of this alternative is \$15.5 million. The cost estimate is based upon an intake structure on the Caney Fork River with a pumping station with two 30,000 gpm pumps and approximately 7.0 miles of 48 inch pipeline to the Meadow Park Lake and Treatment Plant.

This alternative is capable of supplying the 3.5 million gallons per day of projected demand required, but provides no additional storage of raw water. The capital cost of the system would have to be increased to include construction of a detention basin at the intake site in order to provide any additional storage of raw water.

A portion of the water pumped would be stored in the Meadow Park Lake, significantly increasing the sediment load to the lake. Water quality for treatment purposes from the Caney Fork River is anticipated to be less desirable than the water quality in the Meadow Park Lake.

This alternative is not the most cost effective and not the selected alternative. In addition, this alternative would increase the imbalance of the transfer into the Upper Tennessee River Basin



as demand continues to grow in the water system. The alternative would effectively continue to increase flows in the Obed River which is a growing concern for the National Park Service.

Water harvesting from Lake Tansi: This alternative proposes harvesting the water for the lake Tansi reservoir, located in the Upper Tennessee Clinch/Emory River Basin, for transfer to the Meadow Park Lake reservoir, located within two miles of Lake Tansi on the other side of the Tennessee Divide in the Upper Cumberland River Basin.

The Lake Tansi reservoir is a 404 acre man-made impoundment at normal pool and was constructed in the 1960's. Meadow Park Lake is a 274 acre man-made impoundment at normal pool built in 1937 as a WPA project. Both reservoirs are located south of the City of Crossville in a rural portion of Cumberland County.

The proposed intake system includes an intake in Lake Tansi, a raw water pumping station adjacent to the lake at the intake, and construction of 2.1 miles of 36 inch pipeline to the Meadow Park Lake and Treatment Plant capable of drawing up to the safe yield of the Lake Tansi reservoir. Piping alternatives for the pipeline have been evaluated to provide a system with the least amount of electrical input power. The cost difference of electrical power for different pipeline sizes were compared to the cost of pipe and installation for each of the sizes to provide a system with the lowest present value. This analysis has resulted in the selection of a 36 inch pipeline. A secondary benefit of minimizing the electrical cost for the system is the minimization of environmental impacts from the generation of electrical power.

This alternative is capable of supplying the 3.5 million gallons per day of projected demand required and provides additional storage of raw water. The estimated capital cost of this alternative is \$5.0 million. The cost estimate is based upon an intake structure at Lake Tansi with a pumping station with two 5000 gpm pumps and approximately 2.1 miles of 36 inch pipeline to the Meadow Park Lake and Treatment Plant.

It has been determined to be the chosen alternative based upon the evaluation of economic, environmental, and engineering considerations.

1.8. A listing of conservation programs or practices occurring or proposed of the system in the receiving river basin.

As stated previously, a portion of the inter basin transfer is ongoing but was not a grandfathered activity authorized by the Tennessee Department of Environment and Conservation. In 2008, the City of Crossville began a major reinvestment program to reduce the system's water loss as the first step toward major conservation of water. The program is examining losses due to flushing operations, unmetered water resulting from age and deterioration of meters, and losses due to piping materials. The program will take at least three years to complete and has a goal of reducing the City's water loss to an estimated 15 to 17%. This will ultimately represent approximately a 10% reduction in the raw water withdrawn by the City of Crossville.

In addition, the City of Crossville has worked jointly with local industries that are large consumers within their water system to define opportunities to reduce water consumption, opportunities for water reuse, and methods to minimize wastewater discharges. The City in cooperation with these industries has been able to significantly reduce the total water consumption by industries and their wastewater discharges.



Some of the effects of these efforts can be seen in the tables and graphs contained within subsection 1.4 of this application.

No additional conservation programs are currently proposed until a determination can be made as to the effectiveness of the existing program.

1.9. The proposed date upon which the water transfer is to commence.

The proposed transfer is proposed to commence in August 2010.

1.10. Purpose and justification for the proposed transfer.

The City of Crossville has reached 75% to 80% capacity of its existing raw water supplies for the production of potable water. The configuration and supply network of the Cumberland County Region has changed significantly in the last five years with the City of Crossville remaining the primary supplier of water for the region. The droughts of 2006, 2007, and 2008 created shortages in the raw water supply which mandated the enforcement of water use restrictions throughout the region.

The City must augment the currently available supply in order to maintain adequate water volumes to its customers in the region. The projected 20- year raw water demand is 7.54 million gallons per day. The City of Crossville Facilities Plan, which encompasses the twenty year period from 2009-2029, estimates an average annual growth rate for demand on the City water system of 3.2%.

The proposed transfer has several purposes that include providing additional water resources to the planning region to meet future demands and prevent rationing of water during drought conditions, allow the repair of the Meadow Park Dam, and to provide a means to help reduce the net transfer into the Upper Tennessee River Basin by the City of Crossville.

1.11. Any other appropriate information.

Intergovernmental coordination has been completed for this project and findings are as follows:

National Park Service, Final Section 7 Determination for Project:

“In short, we have determined that, as proposed, the project is not likely to unreasonably diminish the values for which the Obed Wild and Scenic River is designated to protect.”

November 13, 2009

State of Tennessee Department of Environment and Conservation:

Finding of No Significant Impact

These reports are attached for your reference

Attachments: Water System Map

Technical Memo on City of Crossville Inter-Basin Transfers



City of Crossville, Drinking Water Facilities Plan, ARRA Raw Water Harvesting Project

TDEC Finding of No Significant Impact

TDEC Intergovernmental Comments Memo

National Park Service Section 7 Final Determination

Permit Application Fee in the amount of \$10,000

1.12. Approval to Submit Application:

I hereby approve submittal of this application to the State of Tennessee, Department of Environment and Conservation for the City of Crossville.

Mr. Ted Meadows
City Manager

